



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/760,277

01/21/2004

Jason Sterne

ALC 3112

9844

7590 03/11/2008
KRAMER & AMADO, P.C.
Suite 240
1725 Duke Street
Alexandria, VA 22314

EXAMINER

RUTKOWSKI, JEFFREY M

ART UNIT	PAPER NUMBER
----------	--------------

2619

MAIL DATE	DELIVERY MODE
-----------	---------------

03/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/760,277	Applicant(s) STERNE ET AL.	
	Examiner JEFFREY M. RUTKOWSKI	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claim 7** recites the limitation “the excessive rate” in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim because there is no previous recitation of “a(n) excessive rate”.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain et al. (US Pat 7,177,311), hereinafter referred to as Hussain in view of Meggers et al. (US Pat 6,728,270), hereinafter referred to as Meggers.

Art Unit: 2619

6. For **claim 1**, Hussain teaches a flow meter structure (access control list) is associated with a packet flow. The flow meter structure contains various statistics associated with the packet flow, including packet counts for a time interval (configuring a packet rate limit for an ACL (access control list) interface, defined by a maximum number of packets P_{max} acceptable in a time interval $T_{refresh}$). When a packet is received, the current packet flow count is compared to a predetermined maximum value (counting the number of packets P received at said ACL interface). If the maximum value is exceeded, the packet for that flow is dropped [**col. 11 line 55 to col. 12 line 5 and figure 5**] (discarding all packets arriving at said ACL after P_{max} has been reached).

7. Hussain does not teach placing rejected packets into a separate queue. Meggers teaches the queuing of rejected packets absent from the teachings of Hussain by disclosing a queue structure where rejected real-time packets are placed into a separate First-In-First-Out (FIFO) (extraction queue) to be processed (further examined) according to a best effort strategy [**col. 15 lines 40-45**]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to further process rejected packets in an extraction queue in Hussain's invention to prioritize packet flows [**Meggers, col. 15 line 45**].

8. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain in view of Meggers, as applied to **claim 1** above, and further in view of Cheriton et al. (US Pg Pub 2004/0252693), hereinafter referred to as Cheriton.

9. For **claim 2**, Hussain teaches a flow meter structure (ACL) contains various statistics associated with a packet flow, including a maximum number of packets over a time interval [**see claim 1**]. Hussain does not teach whether or not the parameters of the flow meter structure are

Art Unit: 2619

configurable. Cheriton teaches the configurable parameter limitation absent from the teachings of Hussain by disclosing a Time-To-Live (TTL) tag, which is included in an ACL, can be revised by a network administrator [0041] (wherein Pmax and Trefresh are configurable). It would have been obvious to a person of ordinary skill in the art at the time of the invention to allow a network administrator to configure the time interval and maximum number of packets in Hussain's invention to give the user flexibility to implement the ACL in a manner that best suits their particular needs.

10. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain in view of Meggers, as applied to **claim 1** above, and further in view of Kesavan (US Pg Pub 2004/0062200) and Ozveren (US Pat 5,432,784).

11. For **claim 3**, Hussain teaches the flow meter structure includes a counter (providing a packet rate limit counter at said ACL interface and initiating said counter at a value StartCount). The counter is incremented each time a packet is received [col. 11 lines 55-64] (incrementing the counter with each received packet of said packet flow to provide a CurrentCount).

12. The teachings of Hussain disclose the counter must be less than a maximum count value [see **claim 1**]. Hussain's teachings are not clear as to the initial value of the counter. Ozveren expands on the teachings of Hussain by disclosing a counter can be initialized either to zero or some number greater than zero [col. 7 lines 10-16]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use counter initialization values in Hussain's invention as a way to indicate whether or not flow bandwidth should be limited.

Art Unit: 2619

13. Hussain does not teach a counter refresh interval. Kesavan teaches the counter refresh interval absent from the teachings of Hussain by disclosing a counter is reset when a time interval has expired **505 [figure 5]** (resetting said counter at said time intervals Trefresh). It also would have been obvious to a person of ordinary skill in the art at the time of the invention to use Kesavan's time interval refresh in Hussain's invention to ensure the counter does not erroneously start dropping packets.

14. **Claims 4-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain in view of Meggers, Kesavan and Ozveren as applied to **claim 3** above, and further in view of Hao (US Pat 6,851,008).

15. For **claim 4**, Hussain teaches if a packet for a flow exceeds a maximum packet count over a time interval, the packet is dropped [see **claim 1**]. Hussain does not teach all packets are dropped when saturation occurs. Hao teaches the dropping of all packets limitation absent from the teachings of Hussain by disclosing saturation occurs when a memory buffer exceeds a "DROP" threshold. In response, a system will start dropping incoming data packets [**col. 7 lines 12-15**] (discarding all packets arriving at said ACL interface after said counter reached a saturation value CountSat).

16. It would have been obvious to a person of ordinary skill in the art at the time of the invention to drop all packets when saturation occurs in Hussain's invention to prevent a catastrophic failure of the system.

17. For **claim 5**, the rejection of **claim 4**, discusses the limitation of discarding of all packets when a saturation value has been reached and provides the motivation to combine (discarding all packets arriving at said counter after said counter reached a saturation value CountSat). Hussain

Art Unit: 2619

does not teach dropped packets are counted. Kesavan teaches the counting of dropped packets limitation absent from the teachings of Hussain by disclosing a storm control device drops packets until the number of or byte count value of dropped packets for a time interval falls below a lower threshold value. The dropping of packets occurs when an upper threshold in a preceding time interval is exceeded [0032] (counting the number of the packets discarded since said counter reaches said saturation value until said Trefresh). It would have been obvious to a person of ordinary skill in the art at the time of the invention to count the number of packets discarded over a time interval in Hussain's invention to keep track of the interface rate.

18. For **claim 6**, Hussain teaches the flow meter structure contains a single counter [col. 11 line 63] (wherein counting of the discarded packets is performed with said counter).

19. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain in view of Meggers, as applied to **claim 1** above, and further in view of Jungck et al. (US Pg Pub 2002/0009079), hereinafter referred to as Jungck.

20. For **claim 7**, the combination of Hussain and Meggers disclose the use of an extraction queue for holding rejected packets requiring further processing. The combination of Hussain and Meggers does not teach determining a cause of an excessive rate. Jungck teaches a packet interceptor adapter 720 that provides Denial of Service (excessive rate) protection [0179, figure 7]. According to Jungck, packets are dequeued and various packet properties are examined to determine if the packet should be accepted. For example, if a number of malformed packets received from a particular source exceeds a certain threshold, the source's Internet Protocol address is blacklisted [0179-0183] (determining a cause of the excessive rate). It would have been obvious to a person of ordinary skill in the art at the time of the invention to determine the

Art Unit: 2619

cause of an excessive rate in Hussain's invention to prevent the source of the attack from being able to launch future attacks against the same target.

Response to Arguments

21. Applicant's arguments with respect to claim 01/08/2008 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY M. RUTKOWSKI whose telephone number is (571)270-1215. The examiner can normally be reached on Monday - Friday 7:30-5:00 PM EST.

Art Unit: 2619

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeffrey M Rutkowski
Patent Examiner
02/20/2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2619